

## ABSTRACT OF THE DISCLOSURE

[0054] Protection paths are dynamically allocated in a wavelength-division multiplexed network including a plurality of nodes (12) coupled by communication links (14). A database (26) stores information regarding the status of the network including information associating channels in each link of the node to one or more protection paths and information associating channels in each link to respective working paths. Upon receiving a request for a new protection path to protect a defined working path, links are identified that have at least one shareable channel which may be shared between the new protection path and one or more existing protection paths, as are links that do not have a shareable channel but do have an unused channel that may be used for the new protection path. Costs are assigned to identified links where links that have at least one shareable channel are weighted differently than links that do not have a shareable channel. A protection path is determined using the found links based on the costs.